




STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

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GOVERNOR

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ACTING COMMISSIONER

MEMORANDUM

TO: Board of Environmental Protection
FROM: Marc A. R. Cone P.E., Bureau of Air Quality 
DATE: November 18, 2010
SUBJECT: Verso Bucksport LLC
Offsets for Major Modification (air emission license application A-22-77-4-A)
Informational Purposes Only

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Summary

Verso Bucksport, LLC has submitted an air emission application to modify the biomass feed rate in Boiler 8 to allow for the use of additional biomass fuel (from 26 tons/hr to approximately 80 tons/hr) in order to produce energy with a new 25 MW turbine. The application is classified as a major modification. As part of the licensing process, Verso Bucksport has to obtain offset credits for a VOC increase of 94 tons/year. The Department's regulation 06-096 CMR 113 stipulates that 'all trades involving VOC offset credits or an increase in VOC emissions requiring offsets pursuant to this Chapter must be presented to the Board of Environmental Protection prior to Department approval.' (*Growth Offset Regulation*, 06-096 CMR 113, Section 2(F)). There is no action required by the Board.

Currently, the draft license is in the 30 day comment period for public and Environmental Protection Agency (EPA) review.

Project Background

Boiler 8 is an 814 MMBtu/hr boiler which began operations in 1984 and is currently licensed to fire fuel oil (including specification waste oil, off-specification waste oil, and #6 and #2 fuel oil), natural gas, tire derived fuel, bituminous coal, and biomass (including wood waste, wood chips, bark, paper mill sludge, waste papers, and fiber core ends). Boiler 8 is controlled by multiple centrifugal cyclones, an electrostatic precipitator (ESP), and low NO_x burners for oil and gas. Verso Bucksport has proposed upgrades to the boiler to be able to increase the biomass firing rate to approximately 80 tons/hr (from 26 tons/hr) in order to generate steam from renewable resources to drive a new 25 MW turbine. Coal and tire derived fuel will be discontinued once the changes to the boiler are in place. In addition to the combustion upgrades, Verso Bucksport will install Selective Non-catalytic Reduction

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(SNCR) to reduce NO_x emissions. The following table compares the current configuration to the proposed configuration:

Boiler 8 Changes

	Current Boiler 8	Proposed Boiler 8
Capacity:	814 MMBtu/hr	- 814 MMBtu/hr
Fuels:	<ul style="list-style-type: none"> - biomass - #6 and #2 fuel oil, waste oil - natural gas - coal - tire derived fuel 	<ul style="list-style-type: none"> - increase biomass feed rate - 1.5 million gallons annual fuel oil limit - natural gas - discontinuation of coal and tire derived fuel
Control Equipment:	<ul style="list-style-type: none"> - Multiple centrifugal cyclones - Electrostatic Precipitator (ESP) - low NO_x burners 	<ul style="list-style-type: none"> - Multiple centrifugal cyclones - ESP - low NO_x burners - Selective Non-catalytic Reduction (SNCR)

VOC Offsets

Per 06-096 CMR 113, major air emission sources located within the geographical bounds of an area which is designated as nonattainment under the former one-hour federal ozone standard or under the eight-hour federal ozone standard, whichever is in effect, or in the Ozone Transport Region must obtain offset credits. This includes sources proposing a modification that would result in a significant emissions increase of the nonattainment pollutant after the application of Lowest Achievable Emission Rate (LAER). The offset credit must be permanent, enforceable, surplus, real and a quantifiable reduction.

For the proposed Boiler 8 upgrade, Verso Bucksport must obtain offset credits for the proposed VOC increase of 94 tons/year, but not for increases in NO_x. The facility is located within the Section 182(f) 'NO_x waiver' area and is therefore exempt from obtaining offsets for NO_x emissions.

Since Verso Bucksport is in the NO_x waiver area, NO_x credits may be used to offset VOC emissions to the extent allowed under the Clean Air Act. The same number of offset credits must be obtained whether NO_x or VOC credits are used. All trades involving VOC offset credits must be presented to the Board of Environmental Protection for informational purposes prior to Department approval and the offset credit reductions must be federally enforceable by the time the air emission license for the user is issued.

Verso Bucksport has proposed to permanently shutdown Boiler 7 (226 MMBtu/hr, oil fired) to obtain the offsets for the Boiler 8 project. Using the established VOC offset

ratio of 1.15 to 1, Verso Bucksport must obtain 108.1 tons of VOC credits to offset the 94 ton VOC increase:

Offset Ratio	Proposed Increase	VOC Credits Needed
1:1.15	94 tpy	108.1 tpy

Offset credits may be generated based on actual emission reductions for any consecutive 24-month period after May 31, 1994. Boiler 7 NO_x credits were calculated based on 1997 and 1998 fuel oil data. An average of 8,366,000 gallons of #6 fuel was used (8,541,000 gallons in 1997 and 8,191,000 gallons in 1998). Actual NO_x emissions were calculated to be 170.5 ton/year (using historic NO_x CEM data of 0.27 lb/MMBtu). 06-096 CMR 113, section 5(D) requires an adjustment to the base credit by applying a compliance assurance multiplier reflecting the method of measurement. Use of CEM data has a 0.95 compliance assurance multiplier; therefore, the NO_x offset credit available from Boiler 7 is 162 tons/year:

Actual NOX Emission calculated from Boiler 7 CEMS (97/98 average)	Compliance Assurance Multiplier	VOC Credits Generated from Boiler 7 Shutdown
170.5 tpy	0.95	162 tpy

The Department certifies that the emissions from the permanent shutdown of Boiler 7 can be used to offset the upgraded Boiler 8 VOC emissions. Issuance of the air emission license will certify both the generation of the credit offsets and the use of the credit offsets for this proposed project.